

**ABSTRACT**

The invention encompasses improved selective polyamides for binding to specific nucleotide sequences of double stranded DNA as well as methods for designing and synthesizing 5 polyamide DNA binding ligands that are selective for an identified specific nucleotide sequence. The 3-hydroxy-N-methylpyrrole/N-methylpyrrole carboxamide pair specifically recognizes the T•A base pair, while the N-methylpyrrole/3-hydroxy-N-methylpyrrole pair recognizes A•T nucleotide pairs. Similarly, an N-methylimidazole/N-methylpyrrole carboxamide pair 10 specifically recognizes the G•C nucleotide pair, and the N-methylpyrrole/N-methylimidazole carboxamide pair recognizes the C•G nucleotide pair.